

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

- 1 1. (Currently Amended) A switched capacitor integrator system comprising:
 - 2 an input cascoded amplifier circuit;
 - 3 ~~a summing junction;~~
 - 4 an integrating switched capacitor circuit including an integrating capacitor
 - 5 and a summing junction, said integrating switched capacitor circuit connected to the output
 - 6 of said cascoded amplifier circuit and to said summing junction; said integrating switched
 - 7 capacitor circuit including an input switched capacitor circuit responsive to an input and
 - 8 connected to said summing junction; and
 - 9 a correlated double sampling capacitor circuit including an offset capacitor
 - 10 interconnected between said summing junction and ~~said an~~ an input of said cascoded amplifier
 - 11 circuit, the offset capacitor storing an offset voltage of the summing junction in one cycle,
 - 12 and subtracting the offset voltage from the output of the integrating capacitor in another
 - 13 cycle.
- 1 2. (Original) The switched capacitor integrator system of claim 1 in which said input
- 2 switched capacitor circuit includes a variable capacitance circuit.

1 3. (Original) The switched capacitor integrator system of claim 2 in which said variable
2 capacitance circuit includes a plurality of capacitors.

1 4. (Original) The switched capacitor integrator system of claim 3 in which said variable
2 capacitance circuit includes a plurality of switches at its input.

1 5. (Original) The switched capacitor integrator system of claim 3 in which said variable
2 capacitance circuit includes a plurality of switches at its output.

1 6. (Original) The switched capacitor integrator system of claim 1 in which said correlated
2 double sampling capacitor circuit includes a hold capacitor interconnected to the output of
3 said cascoded amplifier circuit and through a first switch to the input of said cascoded
4 amplifier circuit and through a second switch to a bias voltage.

1 7. (Currently Amended) The switched capacitor integrator system of claim 6 in which said
2 hold capacitor is connected to said output of said cascoded amplifier circuit ~~through a third~~
3 ~~switch.~~

1 8. (Original) The switched capacitor integrator system of claim 1 in which said input
2 switched capacitance circuit includes a gain switching circuit.

1 9. (Original) The switched capacitor integrator system of claim 1 in which said summing
2 junction is adapted for receiving additional inputs.

1 10. (Original) The switched capacitor integrator system of claim 9 in which said additional
2 inputs include a digital to analog converter (DAC) circuit.

1 11. (Original) The switched capacitor integrator system of claim 10 including a centering
2 circuit and said additional inputs include a centering circuit output.

1 12. (Original) The switched capacitor integrator system of claim 11 in which said centering
2 circuit includes a center switching circuit responsive to an input source that may be shared
3 with the DAC.

1 13. (Original) The switched capacitor integrator system of claim 1 which is a single ended
2 system.

1 14. (Original) The switched capacitor integrator system of claim 1 which is a differential
2 system and there is a second complementary switched capacitor circuit and a second
3 complementary correlated double sampling circuit.

1 15. (Original) The switched capacitor integrator system of claim 1 in which said inputs
2 include continuous voltage inputs.

1 16. (Original) The switched capacitor integrator system of claim 1 in which said cascoded
2 amplifier circuit includes a plurality of stages and at least the first stage input is cascoded.

1 17. (Original) The switched capacitor integrator system of claim 11 in which said centering
2 circuit includes a plurality of capacitors and a switching circuit to select a capacitor to
3 provide a predetermined centering voltage.

1 18. (Original) The switched capacitor integrator system of claim 16 in which said first stage
2 includes an input differential cascoded transistor pair for reducing Miller capacitance effects
3 from the input to the output of said input differential transistor pair.

1 19. (Original) The switched capacitor integrator system of claim 1 in which said cascoded
2 amplified circuit includes a load circuit.

1 20. (Original) The switched capacitor integrator system of claim 19 in which said cascoded
2 load circuit includes current sources.

1 21. (Original) The switched capacitor integrator system of claim 19 in which said cascoded
2 load circuit includes resistors.

1 22. (Original) The switched capacitor integrator system of claim 19 in which said cascoded
2 load circuit includes diode connected MOSFET's.

1 23. (Original) The switched capacitor integrator system of claim 1 in which said cascoded
2 amplifier circuit includes a plurality of stages and at least the first stage includes an input

3 differential cascoded transistor pair for reducing Miller capacitance effects from the input to
4 the output of said input differential transistor pair.

1 24. (New) A switched capacitor integrator system comprising:

2 an input cascoded amplifier circuit;

3 an integrating switched capacitor circuit including an integrating capacitor
4 and a summing junction, said integrating switched capacitor circuit connected to the output
5 of said cascoded amplifier circuit and to said summing junction; said integrating switched
6 capacitor circuit including an input switched capacitor circuit responsive to an input and
7 connected to said summing junction; and

8 a correlated double sampling capacitor circuit including an offset capacitor
9 interconnected between said summing junction and an input of said cascoded amplifier
10 circuit and including a hold capacitor interconnected to the output of said cascoded
11 amplifier circuit and through a first switch to the input of said cascoded amplifier circuit and
12 through a second switch to a bias voltage, the offset capacitor storing an offset voltage of
13 the summing junction in one cycle, and subtracting the offset voltage from the output of the
14 integrating capacitor in another cycle.

1 25. (New) A switched capacitor integrator system comprising:

2 an input cascoded amplifier circuit;

3 an integrating switched capacitor circuit including an integrating capacitor
4 and a summing junction, said integrating switched capacitor circuit connected to the output
5 of said cascoded amplifier circuit and to said summing junction; said integrating switched

capacitor circuit including an input switched capacitor circuit responsive to an input and connected to said summing junction, said input switched capacitance circuit including a gain switching circuit; and

a correlated double sampling capacitor circuit including an offset capacitor interconnected between said summing junction and an input of said cascoded amplifier circuit the offset capacitor storing the voltage offset of the summing junction in one cycle, and subtracting the voltage offset from the output of the integrating capacitor in another cycle.

26. (New) A switched capacitor integrator system comprising:

an input cascoded amplifier circuit;

an integrating switched capacitor circuit including an integrating capacitor and a summing junction, said integrating switched capacitor circuit connected to the output of said cascoded amplifier circuit and to said summing junction; said integrating switched capacitor circuit including an input switched capacitor circuit responsive to an input and connected to said summing junction, said summing junction adapted for receiving additional inputs including a digital to analog converter (DAC) circuit; and

a correlated double sampling capacitor circuit including an offset capacitor interconnected between said summing junction and an input of said cascoded amplifier circuit the offset capacitor storing the voltage offset of the summing junction in one cycle, and subtracting the voltage offset from the output of the integrating capacitor in another cycle.

1 27. (New) The switched capacitor integrator system of claim 26 including a centering circuit
2 and said additional inputs include a centering circuit output.

1 28. (New) The switched capacitor integrator system of claim 27 in which said centering
2 circuit includes a center switching circuit responsive to an input source that may be shared
3 with the DAC.

1 29. (New) The switched capacitor integrator system of claim 27 in which said centering
2 circuit includes a plurality of capacitors and a switching circuit to select a capacitor to
3 provide a predetermined centering voltage.